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MILK DOUBLEWAVE FEVER IN MOSCOW OBLAST* (DISTRICT)
(Materials of the Etiological and Epidemiological Research of the Nidus)

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Milk Fever

Conclusions

1. With the study of the nidus of infection which was observed in Moscow oblast of the so-called milk doublewave fever, a number of viral agents were extracted from different sources (blood of the typically sick patients, domestic goats, ticks *Ixodes ricinus*). Four isolates underwent a detailed analysis.

2. It was established that these strains are highly pathogenic for white mice, causing by various ways of infection a mortal paralytic infection. The titers of virus LD₅₀ reached 10^{-8} to $10^{-8.7}$. It was found out also that domestic goats are susceptible to the intracerebral infection. Positive results were achieved by the planting of the viruses on chicken embryos.

3. All strains filtrated well through bacterial filters, were well preserved in cold in glycerine and in dry condition under vacuum. Inactivation of the virus by boiling was achieved in 2 - 3 minutes.

4. In serological reactions (neutralization of virus and the binding of the complement) a homogeneity of all virus strains, as well as its etiological role in the emergence of milk fever, was established. The diagnostics of the disease by means of the reaction of the binding of the complement proved to be possible from the end of the second week of the disease, and by means of the reaction of neutralization, from the end of the third week of the disease.

5. The test of the specific formalin vaccine from the virus of milk fever on white mice showed its high immunization effect and preservation of its immunogenic qualities not less than 6 months after its preparation. By the testing of the resistance in white mice who had been vaccinated by the "F" strain vaccine, the homogeneity of all strains which were studied, was confirmed.

6. In the cross serological reactions and experiments in cross immunity a great antigenic proximity of the studied virus strains to the viruses to tick and Scotch (encephalitis and Omsk hemorrhagic fever) was established. However, the data which was received by the test of cross immunity pointed out also some differences in the antigenic structure of the virus of milk fever from the viruses of tick encephalitis and Omsk hemorrhagic fever.

* Louping ill

7. By the special experiments on goats it was established that besides the viruses of milk fever, the viruses of tick and Scotch encephalitis (louping ill) and Omsk hemorrhagic fever also have the ability to penetrate into the milk of these animals under experimental conditions. By experimental massive infection of the cow by the virus of milk fever we were able to observe the passing of the virus into the blood as well as the milk of this animal.

8. Milk fever is a spring-fall season disease. The disease manifests itself in the form of family-group outbreaks, including persons of different ages and professions. The origin of the outbreaks is connected with consumption of raw milk of domestic goats (and possibly also of cows' milk).

9. The animals are infected by the biting of the Ixodes ticks -- the carriers of the virus. This is confirmed by the coincidence of the dynamics of the activity of ticks Ixodes ricinus and the infection by milk fever, as well as the discharge of the virus of this type from the ticks, and the data of serological study of domestic animals.

10. By research of a number of materials from the nidus of infection which are similar in a clinico-epidemiological way with the milk fever (in Byelo-Russia, Bulgaria), an immunological proximity of this disease to milk fever was established.

11. The problem of independence of milk fever cannot be considered presently as finally settled. However, the materials of the study of the nidus of milk fever in Moscow oblast', where tick encephalitis or Omsk hemorrhagic fever was never observed, makes the supposition most probable that milk fever is an independent disease.

12. On the basis of study of the nidus of milk fever in Moscow oblast', a number of measures of prophylactics and diagnostics of this disease are offered.